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Attitude and Divergence in Business Students: An Examination of Personality Differences in Business and Non-Business Students

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Abstract

Many studies have reported that economics and business students have been more apt to act in self-interested ways when compared to their counterparts in other academic fields. It is our contention that past studies have not shed light on the underlying psychological differences which might be leading to this difference in behavior. We put forth evidence that certain business majors are correlated with a marked increase in levels of narcissism and decreased levels of empathy, as measured by psychological personality tests.

Keywords

Business school students, business school pedagogy, empathy, ethics, narcissism, selfishness

Introduction

It has been well established that business students often cheat more and act in less cooperative ways than students from other academic fields (Frank, 2004; McCabe and Trevino, 1995; Khaneman et al., 1986). The complexities surrounding the causes of unethical behavior make it difficult to capture the full picture of what sorts of attitudes or personality characteristics will lead to dubious acts in the business world. However, we believe that at least part of this complexity resides in underlying personality dispositions that result from repeated exposure to the sort of pedagogy applied in business schools. We set out to test whether there are differences in personality dispositions between non-business students and business students.

In posing this question we decided to look at one business school, comparing students' personality profile measurements and undergraduate majors. Our goal was to determine if there is a correlation between being a business major and a student's relative level of narcissism and empathy. Moreover, if business students are indeed more selfish (i.e., more narcissistic and less empathetic compared to others) than non-business students, are there specific business majors that might exhibit this trait to a higher degree? Our sample of students shows that certain business school majors, particularly finance students, tend to be more narcissistic and less empathetic towards others. While we can not be certain, these findings lead us to conjecture that more mathematically rigorous and pecuniary majors like finance and economics tend to manifest personality traits that reflect their exposure to business school pedagogy.

Pedagogy and Business School

The link between education and social development was proposed by John Dewey (1916). In his essay "Education and Experience," Dewey (1938) explores the actual experience of education, ana-

lyzing how pedagogical conditioning can indelibly manifest itself throughout the life of an individual. Dewey states, "Perhaps the greatest of all pedagogical fallacies is the notion that a person learns only the particular thing he is studying at the time. Collateral learning in the way of formation of enduring attitudes is often much more important than the spelling lesson or the lesson in geography...and it is these attitudes that fundamentally count in the future."

Similarly, Durkheim (1925) posits that childhood and adolescent education is an important facet of moral development. Viewing morality as a cognitive and developmental process, he felt that an individual's ethical framework stemmed from learning how to construct moral judgments, as well as from environmental conditioning. Both Dewey and Durkheim suggest that at the core of education is a fundamental need to complement the analytical tools students learn with moral faculties that will assist them in negotiating future ethical dilemmas.

Pratt and McLaughlin (1989) offer empirical evidence that supports these prior assessments. They show that the development of subjective norms of college students is a reflection of the attitudes of their peers and their professors. Using Ajzen and Fishbein's (1980) Theory of Reasoned Behavior as a theoretical model, they demonstrate that students' ethical behavior is closely linked to their attitude development in the classroom. There is a separation by which "students' subjective norms (their perceived social pressures) are a function of the normative beliefs (expectations) of various others in the environment" (Pratt and McLaughlin, 1989: 72).

There is substantial literature that indicates undergraduate business students cheat more than other undergraduate majors. Baird (1980) reported that business students are more likely than education majors to cheat, and more likely to conceal instructors' mistakes. Brown (1995) shows that in a survey study of graduate business, education, and engineering students, business students were

substantially more inclined to participate in academic dishonesty. In another study, McCabe and Trevino (1995) looked at reported cheating at 31 of America's best undergraduate colleges and universities. Their sample consisted of 6,096 responses. Business students had a 50% higher rate of reported cheating than any other major.

Khaneman et al. (1986) showed that commerce students were more likely to offer less in an ultimatum bargaining experimental game. In ultimatum bargaining, an individual is asked to divide an amount of money between himself and another player. The other player has the option of accepting or rejecting the offer made by the decision player. Khaneman et al. compared commerce students to psychology students of the same year in school, finding that the business oriented students in general offered less to the opposing player.

Frank (2004) asked a similar question in regards to economics students. Frank posed the question of how non-economics students would compare to economics students in a prisoner's dilemma game. He reported that, under a variety of circumstances, economics students at Cornell University were more likely to defect. In fact, more than half of the economics majors who returned an exit survey said they would defect in the game even if they knew with certainty that their opponent was going to cooperate. What is more intriguing is that other majors had a strong and progressive tendency toward cooperation in the prisoner's dilemma the closer they were to their senior year. This pattern was clearly absent amongst economics majors.

Frank (2004) also used ethics surveys in two undergraduate economics courses that were taught in contrasting ways: one was taught in the standard fashion and the other was taught by an economist specializing in economic development in Maoist China, who stressed the less material objectives of economics. The ethics questions asked students how they would react to certain situations. Students were surveyed once in September at the beginning of the semester, and once at the end of the semester in December. Economics students in the mainstream traditional class were more likely to answer the questions with a cynical view in mind as compared to the class with less of a material focus.

A study by Sims (1993) demonstrates that many business professionals learn selfish behavior while in undergraduate or graduate business school. He shows that these behavioral attitudes follow them into the work world. Sims's work highlights the importance of attitude development in dealing with dishonest or selfish actions. Thus, attitudes that are cultivated and fostered in business school could form at least part of the basis of how corporate cultures evolve. Indeed, Hartikainen and Torstila (2004) show that younger finance professionals that are only up to two years out of business school have dramatically different ethical standards, compared to those who have been working for many years. The implication is that business school teaches one set ethical values and experience in the business world teaches another. These findings suggest that the business school experience may have a direct impact on the ethical behavior of professionals.

Ethics and Personality

As the research demonstrates, undergraduate business majors have been shown to cheat more and act in less ethical ways than other students. There is an important point that these studies only address mildly. How do these sorts of behaviors become engendered on a psychological level in business students? It is our contention that the business school pedagogy might at least

be one of the factors leading to less ethical behavior. However, in order for a curriculum to alter behavior in other facets of a student's behavioral spectrum, it must also change some underlying personality characteristics. In order to test whether business students have different personality characteristics from non-business students, we used a test for selfishness and a test for empathy as a proxy for a general change in deep rooted views of ethics.

The Selfism Test was designed by its developers, Phares and Erskine (1984), as an instrument to measure relative narcissism. As defined by the authors, this test measures "an orientation, belief, or set affecting how one construes a whole range of situations that deal with the satisfaction of needs. A person who scores high on the narcissism scale views a large number of situations in a selfish or egocentric fashion" (Phares and Erskine, 1984).

The other personality measure used in our survey focused on testing individuals for empathetic tendencies, or the ability to understand the needs of others and their community. Goldberg (1999) developed a series of questions to test for empathetic patterns of behavior in respondents. The study of the manner in which individuals attempt to understand and place themselves emotionally in the place of another is of great importance in contemplating how social groups and networks are motivated to carry out pro-social behavior.

Thoits (1989: 328) states that "empathetic role-taking emotions, or vicarious emotions, result from mentally placing oneself in another's position and feeling what the other might feel in that situation." Indeed, this sort of emotional capacity has been important to researchers looking at what motivates moral and pro-social actions, finding that higher levels of empathy tend to make individuals more likely to be morally outraged or to take action to prevent unjust acts (Davis, 1996; Smith-Lovin, 1995; Schieman and Van Gundy, 2000). A heightened sense of morality or an active vigilance in regards to justice are exactly the sorts of behavioral tendencies that lead to more ethical behavior.

Experimental Design

We contacted 1,189 students at a large research university and had 441 respondents, or a 37.9% response rate. A web-based survey was used to allow all non-demographic questions associated with the personality characteristics to be randomized (Umesh and Peterson, 1991). Similar to Kerkvliet (1994), who investigated academic dishonesty among economics students, our survey was completely anonymous. As mentioned, the personality profile portion of the survey had two specific focuses, including a selfism (narcissism) test and an empathy test. We consulted the pertinent psychology literature before we decided on two mainstream and widely accepted scales to test narcissism and empathetic tendencies. There were a total of sixteen questions in this section, eight for each test.

In order to elicit a positive survey return rate it was necessary to use a subset of each test, with eight narcissistic and eight empathetic questions. Each test used a seven point Likert scale, from one to seven, asking respondents to either strongly agree or strongly disagree. The following is a sample question:

Call it selfishness if you will, but in this world today, we all have to look out for ourselves first.

Strongly Agree						Strongly Disagree
1	2	3	4	5	6	7

Students were not informed of the full intent of the project, but told that a study to improve business education was being

conducted. In nine classes, instructors agreed to offer a small amount of extra credit to students who completed the survey. In twelve other classes investigators were allowed to enter the class to ask students to voluntarily complete the survey.

Empirical Model

Dependent Variables

It was necessary to develop two dependent variables: one for narcissism and another for empathy. A cluster analysis was used to identify homogeneous groups of students. There is no prior demarcation; the preprogram algorithm uses the information available to find the most likely cluster size, though the procedure does require a specification on the number of clusters. Following the work of Bunn et al. (1992), Kerkvliet (1994), and Nowell and Laufer (1997), we desired binary dependent variables for methodological purposes. The cluster analysis allowed us to classify students into two groups based on their responses on our psychological tests. This procedure was conducted for both narcissism and empathy. Respondents were accordingly categorized as either narcissistic or non-narcissistic, and empathetic or non-empathetic. For example, 0 = non-narcissistic and 1 = narcissistic. See Table 1, Panel A, for descriptive statistics concerning the cluster analysis.

Independent Variables

Variables describing individual characteristics included gender, year in school, GPA, age, the number of math courses taken and whether the student received extra credit. GPA was an important variable to include. We hypothesized, as Bunn et al. (1992) found with cheating, that GPA would have a negative coefficient on the narcissism test; however, we had no hypothesis concerning this variable on the empathy test. Increasing age and year in school, we believed, would be correlated with higher levels of narcissism, but again we took no position on how these individual characteristics would affect empathy toward others.

Frank (2004) found a positive correlation between number of math classes completed and starting salaries of graduating Cornell University students. Math classes in this way act as a proxy for students attempting to earn more money when they leave. We believed that higher levels participation in math classes would have a positive coefficient in relation with narcissism and a negative effect with empathy.

Dummy variables were used for the individual undergraduate business majors, freshmen, and non-business seniors. Business students fell into one of four classifications: Accounting, Finance, Management and Marketing.¹ Because of the necessity to run multiple regressions at different stages of our investigation in order to compare separate segments of the sample, different sub-groups (including non-business seniors, freshman and marketing students), were used as a baseline at varying stages of the analysis.

Another important dummy variable used in our model was extra credit, where 0 = no extra credit and 1 = extra credit. We felt this was an important factor to control. It was possible that if we did not control for this variable, less narcissistic and more empathetic students would be over-weighted, as more selfish individuals would be less willing to take the survey unless there was some sort of incentive that served their self-interest.

Hypotheses

With both narcissism and empathy, we felt that two important dimensions of personality could be tested: one that should lead to more selfish behavior and another that is more group-orient-

ed. Using these two dimensions of personality as our dependent variables, we developed a series of hypotheses to test our beliefs about differences between business and non-business students, and among business students.

Based upon the nature of the personality traits being tested, our first hypotheses were the following:

Hypothesis 1-A:

A student's classification as a business student will predict higher rates of narcissism.

Hypothesis 1-B:

A student's classification as a business student will predict lower rates of empathy.

Our second set of hypotheses were based upon findings that a traditional economics curriculum was a significant predictor of the chances that a student would tend to act in a more cooperative manner (Frank, 2004). In almost all respects finance is an applied form of economic analysis. However, there is one difference. While both majors use the standard neo-classical model of self-interest as a primary assumption, finance has no social or community oriented application. At some point in the study of economics most students encounter debates about welfare functions, community planning and social economic intervention. However, there is no such debate in the study of financial analysis. Students are called upon to deal with only one question: how to maximize individual and firm profit? Therefore, if there is a similar conditioning effect from the study of finance, as has been suggested by Frank (2004) about economics students, there could be noticeable differences between students from finance and other business majors. Therefore, we formed the following two hypotheses:

Hypothesis 2-A:

Finance majors will have higher rates of narcissism than other less mathematically inclined business majors.

Hypothesis 2-B:

Finance majors will have lower rates of empathy than other less mathematically inclined business majors.

Finally, we wanted to test whether there was a difference between freshman business students and upper-class business students. We are looking for differences that might suggest that there could be a change over the term of a student's participation in a business program. Obviously, because this is not panel data any findings produced here should only be viewed as anecdotal. With this in mind, we conceived the following hypotheses:

Hypothesis 3-A:

Upper-class business majors will have higher rates of narcissism than freshman business students.

Hypothesis 3-B:

Upper-class business majors will have lower rates of empathy than freshman business students.

Estimation

Means and standard deviations of our control variables are included in the estimations reported in Table 1, Panel B. Out of 441 respondents, 435 empathy and 431 narcissistic observations were reported, respectively, for each of our dependent variables. The following two equations were used during analysis:

$$Narcissism_i = \beta_1 GPA_i + \beta_2 Math_i + \beta_3 Age_i + \beta_4 EC_i + \sum_{m \in M} \delta_m BusMajor_{mi}$$

$$Empathy_i = \beta_1 GPA_i + \beta_2 Math_i + \beta_3 Age_i + \beta_4 EC_i + \sum_{m \in M} \delta_m BusMajor_{mi}$$

where Narcissism and Empathy are the binary cluster variables and BusMajor is a dummy variable representing the four categories of business school study. Please see Table 1, Panel C, for a listing of the number of observations for each major area. The independent control variables are grade point average, number of math classes, age and extra credit. A PROBIT model was used to predict narcissism and empathy among our respondents.

Panel A. Cluster Analysis			
Narcissistic Clusters			
	Frequency	Percent	
Narcissism = 0	191	44.3	
Narcissism = 1	240	55.7	
Total	431	100	
Empathetic Clusters			
	Frequency	Percent	
Empathy = 0	160	36.8	
Empathy = 1	275	63.2	
Total	435	100	
Panel B. Control Variable Data			
	GPA	Math Courses	Age
Mean	3.301	3.788	21.565
Std. Dev.	0.493	3.278	2.359
Panel C. Observations			
Major	Students		
Finance	97		
Management	73		
Accounting	32		
Marketing	42		
Total Business	244		
Non-business	197		
Total	441		

Results & Discussion

Finance Majors are Different

We first tested whether there was a general difference in business versus non-business students across our entire sample as according to hypotheses 1A and 1B. The following two models of narcissism and empathy were used for this analysis:

$$(1) \quad Narcissism_i = \beta_1 GPA_i + \beta_2 Math_i + \beta_3 Age_i + \beta_4 EC_i + \beta_5 BusMajor_i$$

$$(2) \quad Empathy_i = \beta_1 GPA_i + \beta_2 Math_i + \beta_3 Age_i + \beta_4 EC_i + \beta_5 BusMajor_i$$

where BusMajor_i is a dummy variable denoting a student that is majoring in business. The results are present in Table 2, Panel A. Notice there are no statistically significant coefficients, indicating similar patterns of personality characteristics between both segments of the sample. Clearly, our initial hypotheses regarding potential differences between business students and non-business students were incorrect.

Next, we wanted to look at the total sample again, but this time we were interested in students in individual business majors that differed from our control group of non-business students. We estimated the following two regressions:

$$(3) \quad Narcissism_i = \beta_1 GPA_i + \beta_2 Math_i + \beta_3 Age_i + \beta_4 EC_i + \sum_{m \in M} \delta_m BusMajor_{mi}$$

$$(4) \quad Empathy_i = \beta_1 GPA_i + \beta_2 Math_i + \beta_3 Age_i + \beta_4 EC_i + \sum_{m \in M} \delta_m BusMajor_{mi}$$

where BusMajor_i is a dummy variable for the identity of each business major ($m = \text{Accounting, Finance, Management and Marketing}$). In this case, the rest of the population, including non-business majors and business freshmen, were the baseline comparison.

Finance majors were significantly more narcissistic and less empathetic than any other undergraduate business major. In both regressions, finance majors were significant at the $p < .05$ level. Notice in Table 2, Panel B, the strong positive coefficient concerning narcissism and the strong negative coefficient concerning empathy as compared to the other business majors. Also, remember this is as compared to the baseline non-business majors. As with prior studies of cheating, GPA was negatively correlated with the narcissism variable and significant at the $p < .01$ level. Our estimation in this case supports hypotheses 2A and 2B. Finance majors were different from their peers at a statistically significant level in the ways we would expect. They had higher levels of narcissism and lower levels of empathy.

Table 2. Binary Probit Regressions of Equations 1-4 (Full Sample)

Independent Variables													
	Constant	GPA	Math Courses	Age	Extra Credit	Business Major	Finan	Mgmt	Acct	Market	Fresh	Obs.	log likelihood
Panel A. Equations 1 & 2													
Narcissism	1.600*** (1.95)	-0.32** (2.41)	-0.015 (0.74)	-0.032 (1.14)	0.266 (1.03)	0.156 (1.18)						401	-275.4
Empathy	-0.063 (0.08)	0.059 (0.46)	0.010 (0.53)	0.018 (0.64)	-0.200 (0.75)	-0.090 (0.68)						405	-267.5
Panel B. Equations 3 & 4													
Narcissism	1.752** (2.11)	-0.354* (2.64)	-0.015 (0.74)	-0.033 (1.15)	0.244 (0.93)		0.336** (2.07)	0.088 (0.48)	-0.185 (0.71)	-0.029 (0.13)		404	-277.6
Empathy	-0.297 (0.36)	0.126 (0.97)	0.010 (0.50)	0.020 (0.69)	-0.230 (0.85)		-0.296** (1.84)	0.190 (1.01)	-0.258 (0.98)	0.241 (1.02)		408	-269.4
Panel C. Equations 5 & 6													
Narcissism	2.937* (2.71)	-0.410* (3.00)	-0.018 (0.91)	-0.071*** (1.85)	0.218 (0.84)						-0.591** (2.45)	399	-274.7
Empathy	0.082 (0.08)	0.067 (0.51)	0.016 (0.79)	0.007 (0.21)	-0.194 (0.73)						0.014 (0.06)	403	-265.5
Notes: z-statistics appear in parentheses. Significance at the 1%, 5%, and 10% are shown by *, **, and *** respectively.													

Notes: z-statistics appear in parentheses. Significance at the 1%, 5%, and 10% are shown by *, **, and *** respectively.

Evidence of Conditioning?

The next stage in our analysis was to compare freshmen to the rest of the sample. It was important to look for trends that might inform us on whether students might self-select into majors that fit predisposed attitudes, or if there could be certain psychological biases that were the result of pedagogical conditioning. It should be emphasized that since this is not panel data any findings discussed here should only be viewed as anecdotal. Nonetheless, we were curious whether there was anecdotal evidence that would support the contention that the business environ-

ment might be affecting students' attitudes.

We analyzed the sample looking for differences between non-business freshmen and business freshmen, but found no statistical differences in either narcissism or empathy.² This supports an assumption that freshmen enter college carte blanche, or without significant selfish or empathic attitudes that are different relative to upper-classman. As there were no differences between non-business and business freshman, we therefore decided to treat freshmen as a homogenous group in order to compare them to upper-classmen. We used the following regression

equations to accomplish this:

$$(5) \quad Narcissism_i = \beta_1 GPA_i + \beta_2 Math_i + \beta_3 Age_i + \beta_4 EC_i + \beta_5 Freshmen_i$$

$$(6) \quad Empathy_i = \beta_1 GPA_i + \beta_2 Math_i + \beta_3 Age_i + \beta_4 EC_i + \beta_5 Freshmen_i,$$

where $Freshmen_i$ is a dummy variable identifying first year students.

We found that when compared to the rest of the sample, freshmen as a group are much less narcissistic. Notice the strong negative coefficient at the 1% significance level in regards to selfishness for freshmen in Table 2, Panel C. Predictably, age is an important variable in the narcissistic regression, significant at the $p < .05$ level. The negative correlation in this regression for age suggests that younger individuals are less likely to have selfish attitudes. GPA has a negative correlation at the $p < .01$ level, suggesting that GPA is an important factor in selfish attitudes even in first year students. The empathy factor is not statistically significant.

Comparison Without Freshmen

We now have anecdotal evidence corresponding to hypotheses 3A and 3B that between a student's freshman year and the completion of their undergraduate major classes, a change in attitude might be taking place, particularly for finance majors. We now needed to take freshmen out of the sample to view how significantly the business major dummy variables would perform compared to only non-business upperclassmen. Recall that in the first step of our analysis, we treated all freshmen and non-business seniors as the baseline for our regression. The possibility existed that when we compared individual business majors in our first step of analysis to the rest of the sample, freshmen were heavily weighting the baseline comparison.

Therefore, in order to get a true measure of any differences between non-business students and individual business majors we needed to take out the freshmen. We used the same regression equations as in our first test, except we eliminated freshmen from the sample:

$$(7) \quad Narcissism_i = \beta_1 GPA_i + \beta_2 Math_i + \beta_3 Age_i + \beta_4 EC_i + \sum_{m \in M} \delta_m BusMajor_{mi}$$

$$(8) \quad Empathy_i = \beta_1 GPA_i + \beta_2 Math_i + \beta_3 Age_i + \beta_4 EC_i + \sum_{m \in M} \delta_m BusMajor_{mi},$$

where $BusMajor_{mi}$ is a dummy variable for the identity of each business student's major (m = Finance, Management, Accounting, Marketing). Notice in Table 3, Panel A, there is only a marginal change from the regressions run on the entire sample in step one. Finance majors are still strongly narcissistic and weakly empathetic at a statistically significant level. Therefore, we can now say that as compared to other upper-class students in this sample, finance majors generally hold attitudes that are more selfish and less empathetic.

Table 3. Binary Probit Regressions of Equations 7-12 (Freshmen Excluded)

	Independent Variables								
	Constant	GPA	Math Courses	Age	Extra Credit	Finan	Mgmt	Acct	Market
Panel A. (All Majors) Equations 7 & 8									
Narcissism	4.159* (3.57)	-0.556* (3.33)	-0.023 (1.03)	-0.096** (2.46)	0.007 (0.02)	0.285*** (1.65)	0.058 (0.29)	-0.239 (0.85)	-0.240 (0.98)
Empathy	-0.159 (0.15)	0.064 (0.38)	0.017 (0.79)	0.019 (0.57)	-0.167 (0.58)	-0.294*** (1.73)	0.128 (0.63)	-0.067 (0.23)	0.280 (1.08)
Panel B. (Business Majors) Equations 9 & 10									
Narcissism	4.286** (2.47)	-0.597* (2.74)	-0.010 (0.38)	-0.097 (1.56)	-0.299 (0.83)	0.540** (2.12)	0.312 (1.16)	0.004 (0.01)	
Empathy	-0.356 (0.21)	0.100 (0.46)	0.023 (0.89)	0.044 (0.73)	-0.377 (1.04)	-0.588** (2.22)	-0.151 (0.53)	-0.366 (1.04)	
Notes: z-statistics appear in parentheses. Significance at the 1%, 5%, and 10% are shown by *, **, and *** respectively.									

Notes: z-statistics appear in parentheses. Significance at the 1%, 5%, and 10% are shown by *, **, and *** respectively.

Finance as Compared to Other Business Majors

The final step in our analysis was to compare the individual business majors to each other, using a business student only segment of our sample population, without freshman and non-business seniors. We used the following regression models:

$$(9) \text{ Narcissism}_i = \beta_1 \text{GPA}_i + \beta_2 \text{Math}_i + \beta_3 \text{Age}_i + \beta_4 \text{EC}_i + \beta_5 \text{Fin}_i + \beta_6 \text{Mngt}_i + \beta_7 \text{Acct}_i$$

$$(10) \text{ Empathy}_i = \beta_1 \text{GPA}_i + \beta_2 \text{Math}_i + \beta_3 \text{Age}_i + \beta_4 \text{EC}_i + \beta_5 \text{Fin}_i + \beta_6 \text{Mngt}_i + \beta_7 \text{Acct}_i$$

where marketing students provided the baseline. Notice in Table 3, Panel B, that when compared to other business majors, finance students are still significantly more narcissistic and less empathetic, both at the $p < .05$ level. Even among their colleagues

in the business areas, students studying finance seem to follow the same pattern of being more selfish and less empathetic.

Conclusion

We investigated whether or not there is a correlation between studying business and the manifestation of personality characteristics that could lead to unethical behavior. Substantial academic literature and research has documented that business students tend to cheat more and act in a more selfish manner than the general undergraduate population. We looked at two underlying personality characteristics that would likely lead to unethical behavior by comparing the respective rates of these variables between different undergraduate majors.

Our study has shown that there is no larger difference be-

tween business and non-business students. However, it does indicate that at least among business students, finance students in particular have a strong likelihood of possessing those qualities which may lead to unethical decision making. More research is necessary to test further the notion that business school pedagogy may be altering the personality characteristics of students. Panel data tracking students over their four years of study is

the most important feature that a future study must employ to arrive at a better test of the effects of business pedagogy on students. While we can only conjecture about what may be causing differences in finance students, we can be sure that in our sample of students finance students manifested those personality traits which would lead them to make decisions that value individual self-interest over group-centered outcomes.

¹ The reader might notice that our regressions have fewer observations than the total number taken. This result occurs if a respondent omitted an answer to the necessary questions needed to form the regression equation. The R² is not reported. This study is not a test of a model of narcissism and empathy, but an attempt to identify differences in these dependent variables between sub-samples.

² Using a sub-sample of only freshmen, regressions of equations (1) and (2) yielded no significant coefficients on the dummy variables for business students.

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Appendix

Selfism Questions

1. Thinking of yourself first is no sin in this world today.
2. It is more important to live for yourself rather than for other people, parents, or for posterity.
3. I regard myself as someone who looks after his/her personal interests.
4. It's best to live for the present and not worry about tomorrow.
5. Getting ahead in life depends mainly on thinking of yourself first.
6. Call it selfishness if you will, but in this world today, we all have to look out for ourselves first.
7. In striving to reach one's true potential, it is sometimes necessary to worry less about other people.
8. Not enough people live for the present.

Empathy Questions

1. I make people feel welcome.
2. I anticipate the needs of others.
3. I love to help others.
4. I am concerned about others.
5. I have a good word for everyone.
6. I am sensitive to the feelings of others.
7. I make people feel comfortable.
8. I take time for others.

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